

SUPPLEMENTARY MATERIAL

Citar este artículo como: Ballen GA. 2018. Tooth row variation in tadpoles of *Dendropsophus labialis* (Anura: Hylidae: Dendropsophini) and the evolution of oral morphology in the genus. *Caldasia* 40(2):216-231. doi: <https://dx.doi.org/10.15446/caldasia.v40n2.65677>.

Appendix S1.1

Dataset for embryos (GS 25 or younger) and referenced as “embryos.csv” in the script. Missing data are NA. Underlines () represent quotation marks in sensitivity analyses (See under data analysis).

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	PosExt	PosCom	Papillae
ICN 53847	NA	2.5	25	_0/1_	0	0	1	0	P
ICN 53847	NA	3.18	25	_0/1_	0	0	1	0	P
ICN 53847	10.84	3.5	25	_0/1_	0	0	1	0	P
ICN 53846	11.56	3.7	25	_0/1_	0	0	1	0	P
ICN 53846	10.38	3.3	25	_0/1_	0	0	1	0	P
ICN 53847	8	3.18	25	_0/2_	0	0	2	1	P
ICN 53847	NA	2.86	25	_0/2_	0	0	2	1	P
ICN 53847	10.45	3.6	25	_0/2_	0	0	2	1	P
ICN 53847	9.9	3.26	25	_0/2_	0	0	2	1	P
ICN 53847	11.05	3.1	25	_0/2_	0	0	2	1	P
ICN 53846	8.86	2.88	25	_0/2_	0	0	2	1	P
ICN 53846	10.66	3.2	25	_0/2_	0	0	2	1	P
ICN 53846	9.37	3.08	25	_0/2_	0	0	2	1	P
ICN 53847	NA	3.36	25	_1/2_	1	0	2	2	P
ICN 53847	NA	3.83	25	_1/2_	1	0	2	2	P
ICN 53847	12.4	4.4	25	_1/2_	1	0	2	2	P
ICN 53847	13.04	4.28	25	_1/2_	1	0	2	2	P
ICN 53849	NA	3.1	25	_1/2_	1	0	2	2	P
ICN 53849	NA	3.78	25	_1/2_	1	0	2	2	P
ICN 53849	9.86	3.26	25	_1/2_	1	0	2	2	P
ICN 53849	11.42	3.61	25	_1/2_	1	0	2	2	P
ICN 53849	11.65	3.76	25	_1/2_	1	0	2	2	P
ICN 53849	14.28	4.85	26	_1/2_	1	0	2	2	P
ICN 53847	8.56	2.56	25	0/0	0	0	0	0	P
ICN 53847	NA	2.35	25	0/0	0	0	0	0	P
ICN 53845	7.45	2.6	22	0/0	0	0	0	0	A
ICN 53845	6.39	1.65	23	0/0	0	0	0	0	na
ICN 53845	7.86	2.45	23	0/0	0	0	0	0	na
ICN 53845	8.00	2.60	23	0/0	0	0	0	0	na
ICN 53845	7.16	2.40	23	0/0	0	0	0	0	A
ICN 53845	9.61	2.98	23	0/0	0	0	0	0	A
ICN 53845	7.03	1.50	23	0/0	0	0	0	0	A
ICN 53845	8.49	2.53	23	0/0	0	0	0	0	A
ICN 53845	7.7	2.3	23	0/0	0	0	0	0	A
ICN 53845	7	2	23	0/0	0	0	0	0	A

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	PosExt	PosCom	Papillae
ICN 53845	7.37	82	23	0/0	0	0	0	0	A
ICN 53845	7.81	1.72	23	0/0	0	0	0	0	A
ICN 53845	7.91	2.02	23	0/0	0	0	0	0	A
ICN 53845	7.46	2.03	23	0/0	0	0	0	0	A
ICN 53845	7.6	1.95	23	0/0	0	0	0	0	A
ICN 53845	7.5	2.05	23	0/0	0	0	0	0	A
ICN 53845	7.34	2.26	23	0/0	0	0	0	0	A
ICN 53845	6.54	2	23	0/0	0	0	0	0	A
ICN 53845	7.19	1.94	23	0/0	0	0	0	0	A
ICN 53845	6.52	1.95	23	0/0	0	0	0	0	A
ICN 53845	7.4	2.05	23	0/0	0	0	0	0	A
ICN 53845	7.34	1.98	23	0/0	0	0	0	0	A
ICN 53845	7.7	2.47	23	0/0	0	0	0	0	A
ICN 53845	8.02	2.18	23	0/0	0	0	0	0	A
ICN 53845	8.3	2.4	23	0/0	0	0	0	0	A
ICN 53845	8.26	2.5	23	0/0	0	0	0	0	A
ICN 53845	8.54	2.85	23	0/0	0	0	0	0	A
ICN 53845	7.43	2.42	23	0/0	0	0	0	0	A
ICN 53845	8.2	2.4	23	0/0	0	0	0	0	A
ICN 53845	7.7	2.37	23	0/0	0	0	0	0	A
ICN 53845	8.26	2.65	23	0/0	0	0	0	0	A
ICN 53845	8.15	2.16	23	0/0	0	0	0	0	A
ICN 53845	8.43	2.5	23	0/0	0	0	0	0	A
ICN 53845	7.97	2.57	23	0/0	0	0	0	0	A
ICN 53845	7.36	2.44	23	0/0	0	0	0	0	A
ICN 53845	7.7	2.6	23	0/0	0	0	0	0	A
ICN 53845	8.6	2.85	23	0/0	0	0	0	0	A
ICN 53845	7.65	2.66	23	0/0	0	0	0	0	A
ICN 53845	8.52	2.85	23	0/0	0	0	0	0	A
ICN 53845	8.22	2.65	23	0/0	0	0	0	0	A
ICN 53845	NA	2.2	23	0/0	0	0	0	0	A
ICN 53845	7.6	2.42	23	0/0	0	0	0	0	A
ICN 53845	8.1	2.47	23	0/0	0	0	0	0	A
ICN 53845	9.25	2.8	24	0/0	0	0	0	0	A
ICN 53845	9.00	2.70	24	0/0	0	0	0	0	A
ICN 53845	8.60	2.75	24	0/0	0	0	0	0	P
ICN 53845	7.73	2.66	24	0/0	0	0	0	0	A
ICN 53845	8.96	2.50	24	0/0	0	0	0	0	A
ICN 53845	9.06	2.74	24	0/0	0	0	0	0	A
ICN 53845	8.18	2.40	24	0/0	0	0	0	0	A
ICN 53845	8.35	2.46	24	0/0	0	0	0	0	A
ICN 53845	8.48	2.44	24	0/0	0	0	0	0	P
ICN 53845	9.07	2.37	24	0/0	0	0	0	0	A
ICN 53845	9.27	2.42	24	0/0	0	0	0	0	P

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	PosExt	PosCom	Papillae
ICN 53845	7.95	2.52	24	0/0	0	0	0	0	A
ICN 53845	7.34	1.94	24	0/0	0	0	0	0	A
ICN 53845	7.45	2.15	24	0/0	0	0	0	0	A
ICN 53845	7.98	2.4	24	0/0	0	0	0	0	A
ICN 53845	9.2	2.5	24	0/0	0	0	0	0	A
ICN 53845	9.1	2.8	24	0/0	0	0	0	0	A
ICN 53845	8.8	2.75	24	0/0	0	0	0	0	A
ICN 53845	9.36	3.1	24	0/0	0	0	0	0	P
ICN 53845	8.22	2.85	24	0/0	0	0	0	0	A
ICN 53845	8.42	2.7	24	0/0	0	0	0	0	A
ICN 53845	8.8	2.85	24	0/0	0	0	0	0	A
ICN 53845	7.85	2.65	24	0/0	0	0	0	0	A
ICN 53845	8.6	2.76	24	0/0	0	0	0	0	P
ICN 53845	8.33	2.75	24	0/0	0	0	0	0	A
ICN 53845	8.05	2.5	24	0/0	0	0	0	0	A
ICN 53845	8.6	2.9	24	0/0	0	0	0	0	A
ICN 53845	7.25	2.5	24	0/0	0	0	0	0	A
ICN 53845	8.75	2.68	24	0/0	0	0	0	0	A
ICN 53845	8.22	2.66	24	0/0	0	0	0	0	A
ICN 53845	8.64	2.76	24	0/0	0	0	0	0	A
ICN 53845	7.72	2.5	24	0/0	0	0	0	0	A
ICN 53845	8.2	2.67	24	0/0	0	0	0	0	A
ICN 53845	8.6	2.8	24	0/0	0	0	0	0	P
ICN 53845	8.46	2.68	24	0/0	0	0	0	0	A
ICN 53845	8.65	2.65	25	0/0	0	0	0	0	P
ICN 53845	8.95	2.7	25	0/0	0	0	0	0	P
ICN 53845	8.8	2.6	25	0/0	0	0	0	0	P
ICN 53845	6.01	1.94	21	0/0	0	0	0	0	A
ICN 53846	NA	2.72	24	0/0	0	0	0	0	P
ICN 53846	10	2.9	25	0/0	0	0	0	0	P
ICN 53846	8.53	2.36	24	0/0	0	0	0	0	A
ICN 53846	9.1	2.82	25	0/0	0	0	0	0	P
ICN 53846	9.3	2.66	25	0/0	0	0	0	0	P
ICN 53846	8.57	2.5	25	0/0	0	0	0	0	P
ICN 53846	9.96	2.9	25	0/0	0	0	0	0	P
ICN 53846	10.36	3.11	24	0/0	0	0	0	0	P
ICN 53846	10.5	3.06	25	0/0	0	0	0	0	P
ICN 53847	7.86	2.75	25	0/1	0	0	1	1	P
ICN 53847	8.84	3.05	25	0/1	0	0	1	1	P
ICN 53847	9.3	3	25	0/1	0	0	1	1	P
ICN 53847	NA	2.95	25	0/1	0	0	1	1	P
ICN 53847	NA	3	25	0/1	0	0	1	1	P
ICN 53847	9.3	2.96	25	0/1	0	0	1	1	P
ICN 53847	8.84	3.04	25	0/1	0	0	1	1	P

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	PosExt	PosCom	Papillae
ICN 53847	9.86	3.44	25	0/1	0	0	1	1	P
ICN 53847	9.29	3.19	25	0/1	0	0	1	1	P
ICN 53847	10.15	3.08	25	0/1	0	0	1	1	P
ICN 53847	10	3.39	25	0/1	0	0	1	1	P
ICN 53847	10.3	3.32	25	0/1	0	0	1	1	P
ICN 53847	9.25	2.96	25	0/1	0	0	1	1	P
ICN 53847	10	3.43	25	0/1	0	0	1	1	P
ICN 53846	8.06	2.5	24	0/1	0	0	1	1	P
ICN 53846	8.25	2.7	25	0/1	0	0	1	1	P
ICN 53846	9.44	2.78	25	0/1	0	0	1	1	P
ICN 53846	10.68	3.15	25	0/1	0	0	1	1	P
ICN 53846	9.72	2.92	25	0/1	0	0	1	1	P
ICN 53846	10.64	3.36	25	0/1	0	0	1	1	P
ICN 53847	10.7	3.62	25	0/2	0	0	2	2	P
ICN 53847	NA	3.4	25	0/2	0	0	2	2	P
ICN 53847	11.35	3.67	25	0/2	0	0	2	2	P
ICN 53847	11.02	3.59	25	0/2	0	0	2	2	P
ICN 53847	10.52	3.3	25	0/2	0	0	2	2	P
ICN 53847	11.31	3.64	25	0/2	0	0	2	2	P
ICN 53847	10.65	3.5	25	0/2	0	0	2	2	P
ICN 53847	NA	3.8	25	0/2	0	0	2	2	P
ICN 53847	12.15	3.39	25	0/2	0	0	2	2	P
ICN 53847	11.06	3.8	25	0/2	0	0	2	2	P
ICN 53847	11.45	3.86	25	0/2	0	0	2	2	P
ICN 53847	11.3	3.64	25	0/2	0	0	2	2	P
ICN 53847	11.95	3.91	25	0/2	0	0	2	2	P
ICN 53847	NA	3.69	25	0/2	0	0	2	2	P
ICN 53847	11.14	3.7	25	0/2	0	0	2	2	P
ICN 53847	11.2	4.08	25	0/2	0	0	2	2	P
ICN 53847	12.78	4.44	25	0/2	0	0	2	2	P
ICN 53846	8.81	2.9	25	0/2	0	0	2	2	P
ICN 53846	11	3.4	25	0/2(1)	0	0	2	2	P
ICN 53847	12.24	4.32	26	1/2	1	1	2	2	P
ICN 53847	NA	3.32	25	1/2	1	1	2	2	P
ICN 53847	12.63	4.08	25	1/2	1	1	2	2	P
ICN 53849	9.82	3.75	25	1/2	1	1	2	2	P
ICN 53849	10.5	3.76	25	1/2	1	1	2	2	P
ICN 53849	12.11	4.38	25	1/2	1	1	2	2	P
ICN 53849	NA	3.71	25	1/2	1	1	2	2	P
ICN 53849	NA	4.56	25	1/2	1	1	2	2	P
ICN 53849	11.6	3.9	25	1/2	1	1	2	2	P
ICN 53849	12.65	3.62	25	1/2	1	1	2	2	P
ICN 53849	12.9	4.26	26	1/2	1	1	2	2	P
ICN 53846	12.14	3.77	25	1/2	1	1	2	2	P

Appendix S1.2

Dataset for larvae (GS 25 or older) and referenced as “larvae.csv” in the script. Missing data are NA. Underlines () represent quotation marks in sensitivity analyses (See under data analysis).

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	Pos	Asymmetry
ICN 53809	28.66	11.65	28	1/2(1)	1	1	2	NA
ICN 53809	43.94	16.09	34	1/2	1	1	2	NA
ICN 53809	50.01	18.19	35	2(2)/2	2	2	2	NA
ICN 53809	62.94	19.77	40	2(2)/2	2	2	2	NA
ICN 53809	66.37	21.54	40	1/2(1)	1	1	2	NA
ICN 53810	39.34	14.04	31	NA	NA	NA	NA	NA
ICN 53810	54.45	18.11	34	1/2	1	1	2	NA
ICN 53810	46.13	16.80	35	1/2(1)	1	1	2	NA
ICN 53810	54.27	17.85	35	1/2(1)	1	1	2	NA
ICN 53810	59.05	18.10	35	1/2	1	1	2	NA
ICN 53810	47.80	16.15	36	1/2(1)	1	1	2	NA
ICN 53810	56.55	16.95	36	1/2	1	1	2	NA
ICN 53810	54.40	18.35	36	1/2(1)	1	1	2	NA
ICN 53810	53.40	17.17	36	2(2)/2	2	2	2	N
ICN 53810	57.60	17.40	36	2(2)/2(1)	2	2	2	Left
ICN 53810	52.15	17.79	36	2(2)/2	2	2	2	Right
ICN 53810	60.70	18.43	36	2(2)/2	2	2	2	N
ICN 53810	61.20	17.35	37	1/2	1	1	2	NA
ICN 53810	56.80	17.54	37	1/2	1	1	2	NA
ICN 53810	61.55	17.80	37	1/2(1)	1	1	2	NA
ICN 53810	55.75	17.45	37	1/2	1	1	2	NA
ICN 53810	57.70	15.60	37	2(2)/2(1)	2	2		N
ICN 53810	53.78	18.00	37	2(2)/2(1)	2	2	2	Right
ICN 53810	57.00	18.74	38	2(2)/2	2	2	2	Right
ICN 53810	58.25	16.85	39	1/2(1)	1	1	2	NA
ICN 53810	58.90	17.25	39	1/2(1)	1	1	2	NA
ICN 53810	58.24	17.71	39	1/2	1	1	2	NA
ICN 53810	55.06	18.02	39	1/2(1)	1	1	2	NA
ICN 53810	64.98	20.35	39	_2_/2(1)	2	1	2	NA
ICN 53810	58.15	16.10	39	2(2)/2(1)	2	2	2	Left
ICN 53810	57.00	16.65	39	2(2)/2(1)	2	2	2	N
ICN 53810	60.70	17.30	39	2(2)/2	2	2	2	N
ICN 53810	59.05	18.27	39	2(2)/2	2	2	2	N
ICN 53810	54.30	16.60	40	1/2	1	1	2	NA
ICN 53810	52.68	16.80	40	1/2(1)	1	1	2	NA
ICN 53810	55.02	17.18	40	1/2	1	1	2	NA
ICN 53810	52.60	16.40	40	2(2)/2(1)	2	2	2	Right
ICN 53810	58.70	16.90	40	2(2)/2(1)	2	2	2	Right
ICN 53810	49.70	17.00	40	2(2)/2(1)	2	2	2	N

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	Pos	Asymmetry
ICN 53810	59.25	17.50	40	2(2)/2	2	2	2	Left
ICN 53810	51.60	15.95	41	1/2(1)	1	1	2	NA
ICN 53810	49.96	15.70	42	NA	NA	NA	NA	NA
ICN 53810	57.75	17.40	42	NA	NA	NA	NA	NA
ICN 53810	40.35	15.25	43	NA	NA	NA	NA	NA
ICN 53811	19.63	6.24	27	1/2(1)	1	1	2	NA
ICN 53811	26.81	8.79	27	1/2	1	1	2	NA
ICN 53811	32.74	10.28	27	1/2(1)	1	1	2	NA
ICN 53811	28.92	9.58	28	1/2	1	1	2	NA
ICN 53811	30.87	9.72	28	1/2(1)	1	1	2	NA
ICN 53811	31.10	9.90	28	1/2(1)	1	1	2	NA
ICN 53811	33.09	11.08	28	1/2	1	1	2	NA
ICN 53811	32.20	10.19	29	1/2	1	1	2	NA
ICN 53811	36.25	10.28	29	1/2(1)	1	1	2	NA
ICN 53811	34.95	10.79	29	1/2(1)	1	1	2	NA
ICN 53811	34.60	10.79	29	1/2(1)	1	1	2	NA
ICN 53811	30.50	10.82	29	1/2(1)	1	1	2	NA
ICN 53811	36.91	10.84	29	1/2(1)	1	1	2	NA
ICN 53811	34.74	10.86	29	1/2(1)	1	1	2	NA
ICN 53811	43.05	14.06	29	1/2(1)	1	1	2	NA
ICN 53811	38.76	11.46	29	_2_(2)/2	2	1	2	N
ICN 53811	31.58	8.90	29	2(2)/2	2	2	2	Left
ICN 53811	40.21	12.29	29	2(2)/2(1)	2	2	2	Left
ICN 53811	36.25	1.63	30	1/2(1)	1	1	2	NA
ICN 53811	32.23	10.30	30	1/2	1	1	2	NA
ICN 53811	33.77	10.42	30	1/2(1)	1	1	2	NA
ICN 53811	37.47	11.75	30	1/2	1	1	2	NA
ICN 53811	38.45	12.33	30	1(1)/2(1)	1	1	2	NA
ICN 53811	34.17	12.41	30	1/2(1)	1	1	2	NA
ICN 53811	32.56	10.52	30	_2_(2)/2	2	1	2	Left
ICN 53811	34.71	10.80	30	_2_(2)/2(1)	2	1	2	Right
ICN 53811	47.82	12.29	30	_2_(2)/2	2	1	2	Left
ICN 53811	35.49	10.53	30	2(2)/2	2	2	2	Right
ICN 53811	35.97	11.30	31	1/2	1	1	2	NA
ICN 53811	39.42	11.75	31	1/2	1	1	2	NA
ICN 53811	37.69	12.00	31	1/2	1	1	2	NA
ICN 53811	38.93	12.10	31	1/2	1	1	2	NA
ICN 53811	41.21	14.00	31	1/2	1	1	2	NA
ICN 53811	41.61	13.65	31	2(2)/2(1)	2	2	2	Right
ICN 53811	34.74	11.18	32	1/2(1)	1	1	2	NA
ICN 53811	37.81	12.56	32	1/2	1	1	2	NA
ICN 53811	38.10	12.15	33	1/2	1	1	2	NA
ICN 53811	34.78	12.22	33	1/2(1)	1	1	2	NA
ICN 53811	39.92	12.27	33	1/2(1)	1	1	2	NA

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	Pos	Asymmetry
ICN 53811	41.41	12.62	33	1/2(1)	1	1	2	NA
ICN 53811	41.43	12.63	33	1/2(1)	1	1	2	NA
ICN 53811	37.25	12.75	33	1/2	1	1	2	NA
ICN 53811	40.84	12.79	33	1/2(1)	1	1	2	NA
ICN 53811	41.12	12.80	33	1/2(1)	1	1	2	NA
ICN 53811	39.41	12.81	33	1/2(1)	1	1	2	NA
ICN 53811	42.56	13.16	33	1/2(1)	1	1	2	NA
ICN 53811	39.96	13.26	33	1/2(1)	1	1	2	NA
ICN 53811	42.64	13.28	33	1/2	1	1	2	NA
ICN 53811	43.04	13.32	33	1/2(1)	1	1	2	NA
ICN 53811	41.95	13.37	33	1/2	1	1	2	NA
ICN 53811	42.09	13.54	33	1/2	1	1	2	NA
ICN 53811	37.18	13.70	33	1/2	1	1	2	NA
ICN 53811	43.42	13.70	33	1/2(1)	1	1	2	NA
ICN 53811	44.24	13.75	33	1/2(1)	1	1	2	NA
ICN 53811	46.34	13.76	33	1/2	1	1	2	NA
ICN 53811	43.45	13.80	33	1/2(1)	1	1	2	NA
ICN 53811	42.79	13.98	33	1/2(1)	1	1	2	NA
ICN 53811	45.57	14.00	33	1/2(1)	1	1	2	NA
ICN 53811	46.90	14.12	33	1/2	1	1	2	NA
ICN 53811	43.40	14.22	33	1/2	1	1	2	NA
ICN 53811	37.76	12.86	33	2(2)/2	2	2	2	N
ICN 53811	44.55	12.89	33	2(2,2)/2	2	2	2	N
ICN 53811	41.15	12.94	33	2(2)/2	2	2	2	N
ICN 53811	21.86	13.56	33	2(2)/2(1)	2	2	2	Left
ICN 53811	40.25	13.77	33	2(2)/2	2	2	2	Left
ICN 53811	27.03	14.30	33	2(2)/2(1)	2	2	2	Right
ICN 53811	37.96	11.79	34	1/2(1)	1	1	2	NA
ICN 53811	33.40	12.17	34	1/2(1)	1	1	2	NA
ICN 53811	40.57	13.04	34	1/2(1)	1	1	2	NA
ICN 53811	42.49	13.07	34	1/2(1)	1	1	2	NA
ICN 53811	40.28	13.50	34	1/2(1)	1	1	2	NA
ICN 53811	47.80	13.52	34	1/2(1)	1	1	2	NA
ICN 53811	44.99	13.77	34	1/2(1)	1	1	2	NA
ICN 53811	48.02	14.35	34	1/2	1	1	2	NA
ICN 53811	50.84	14.59	34	1/2	1	1	2	NA
ICN 53811	45.37	14.60	34	1/2	1	1	2	NA
ICN 53811	41.81	13.80	34	_2_(2)/2	2	1	2	Left
ICN 53811	48.64	15.51	34	_2_(2)/2	2	1	2	Right
ICN 53811	41.26	12.62	34	2(2)/2(1)	2	2	2	N
ICN 53811	40.60	13.06	34	2(2)/2(1)	2	2	2	Right
ICN 53811	41.60	13.50	34	2(2)/2	2	2	2	Right
ICN 53811	40.78	13.77	34	2(2)/2(1)	2	2	2	Left
ICN 53811	43.15	13.89	34	2(2)/2	2	2	2	N

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	Pos	Asymmetry
ICN 53811	41.38	14.00	34	2(2)/2	2	2	2	N
ICN 53811	45.90	14.60	34	2(2)/2	2	2	2	N
ICN 53811	45.17	14.64	34	2(2)/2(1)	2	2	2	Left
ICN 53811	45.65	14.87	34	2(2)/2	2	2	2	Left
ICN 53811	46.86	14.24	35	1/2(1)	1	1	2	NA
ICN 53811	50.73	14.58	35	1/2	1	1	2	NA
ICN 53811	46.16	14.60	35	1/2(1)	1	1	2	NA
ICN 53811	45.82	14.66	35	1/2(1)	1	1	2	NA
ICN 53811	43.86	14.75	35	1/2(1)	1	1	2	NA
ICN 53811	34.00	15.00	35	1/2(1)	1	1	2	NA
ICN 53811	47.90	15.24	35	1/2	1	1	2	NA
ICN 53811	48.13	15.49	35	1/2(1)	1	1	2	NA
ICN 53811	52.68	15.72	35	1/2(1)	1	1	2	NA
ICN 53811	47.18	15.86	35	1/2(1)	1	1	2	NA
ICN 53811	47.45	16.03	35	1/2(1)	1	1	2	NA
ICN 53811	44.88	13.89	35	_2_(2)/2(1)	2	1	2	Right
ICN 53811	42.11	13.90	35	_2_(2)/2(1)	2	1	2	Left
ICN 53811	39.41	14.51	35	_2_(2)/2(1)	2	1	2	Right
ICN 53811	44.55	4.77	35	2(2)/2	2	2	2	N
ICN 53811	44.57	13.61	35	2(2)/2	2	2	2	N
ICN 53811	46.49	13.86	35	2(2)/2(1)	2	2	2	Right
ICN 53811	44.48	14.07	35	2(2)/2(1)	2	2	2	N
ICN 53811	50.14	14.49	35	2(2)/2(1)	2	2	2	N
ICN 53811	44.50	14.55	35	2(2)/2	2	2	2	N
ICN 53811	46.38	14.55	35	2(2)/2	2	2	2	N
ICN 53811	43.97	14.61	35	2(2)/2	2	2	2	N
ICN 53811	44.93	14.62	35	2(2)/2(1)	2	2	2	N
ICN 53811	48.58	14.75	35	2(2)/2(1)	2	2	2	N
ICN 53811	50.87	14.76	35	2(2)/2	2	2	2	N
ICN 53811	44.78	14.85	35	2(2)/2	2	2	2	Left
ICN 53811	47.56	14.96	35	2(2)/2(1)	2	2	2	N
ICN 53811	50.52	15.16	35	2(2)/2	2	2	2	N
ICN 53811	48.84	15.22	35	2(2)/2(1)	2	2	2	Left
ICN 53811	47.36	15.26	35	2(2)/2	2	2	2	N
ICN 53811	43.85	15.41	35	2(2)/2	2	2	2	N
ICN 53811	48.77	15.41	35	2(2)/2(1)	2	2	2	N
ICN 53811	47.04	15.52	35	2(2)/2(1)	2	2	2	N
ICN 53811	46.13	15.58	35	2(2)/2(1)	2	2	2	N
ICN 53811	45.89	15.58	35	2(2)/2	2	2	2	N
ICN 53811	50.69	15.81	35	2(2)/2(1)	2	2	2	N
ICN 53811	40.26	14.14	36	1/2	1	1	2	NA
ICN 53811	43.50	14.73	36	1/2(1)	1	1	2	NA
ICN 53811	46.10	15.40	36	1/2(1)	1	1	2	NA
ICN 53811	48.71	15.93	36	1/2(1)	1	1	2	NA

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	Pos	Asymmetry
ICN 53811	57.55	16.10	36	1/2(1)	1	1	2	NA
ICN 53811	50.06	15.43	36	2(2)/2	2	2	2	N
ICN 53811	37.95	15.50	36	2(2)/2(1)	2	2	2	Left
ICN 53811	50.90	15.61	36	2(2)/2(1)	2	2	2	Right
ICN 53811	51.50	16.10	36	2(2)/2(1)	2	2	2	N
ICN 53811	49.51	16.40	36	2(2)/2	2	2	2	Left
ICN 53811	48.94	15.54	37	1/2(1)	1	1	2	NA
ICN 53811	53.39	15.75	37	1/2	1	1	2	NA
ICN 53811	51.36	16.09	37	1/2(1)	1	1	2	NA
ICN 53811	51.05	16.56	37	1/2(1)	1	1	2	NA
ICN 53811	58.03	16.98	37	1/2(1)	1	1	2	NA
ICN 53811	53.75	16.34	37	2(2)/2(1)	2	2	2	Left
ICN 53811	55.46	16.62	37	2(2)/2(1)	2	2	2	Right
ICN 53811	56.90	16.65	38	1/2	1	1	2	NA
ICN 53811	51.57	17.04	38	1/2(1)	1	1	2	NA
ICN 53811	60.01	17.50	38	1/2(1)	1	1	2	NA
ICN 53811	57.40	17.59	38	1/2	1	1	2	NA
ICN 53811	54.00	16.37	39	1/2	1	1	2	NA
ICN 53811	55.81	16.39	39	1/2	1	1	2	NA
ICN 53811	51.30	16.75	39	1/2	1	1	2	NA
ICN 53811	53.34	16.79	39	1/2(1)	1	1	2	NA
ICN 53811	56.89	17.13	39	1/2(1)	1	1	2	NA
ICN 53811	49.95	17.53	39	1/2(1)	1	1	2	NA
ICN 53811	62.85	18.84	39	1/2	1	1	2	NA
ICN 53811	52.39	15.99	39	_2_(2)/2(1)	2	1	2	N
ICN 53811	51.95	15.24	39	2(2)/2(1)	2	2	2	Left
ICN 53811	52.04	15.95	39	2(2)/2(1)	2	2	2	Right
ICN 53811	55.15	16.85	39	2(2)/2	2	2	2	N
ICN 53811	55.41	17.04	39	2(2)/2(1)	2	2	2	N
ICN 53811	58.33	17.09	39	2(2)/2	2	2	2	N
ICN 53811	51.25	15.59	40	1/2	1	1	2	NA
ICN 53811	54.86	16.18	40	1/2(1)	1	1	2	NA
ICN 53811	51.95	16.86	40	1/2(1)	1	1	2	NA
ICN 53811	56.50	16.90	40	1/2	1	1	2	NA
ICN 53811	53.59	17.44	40	1/2	1	1	2	NA
ICN 53811	61.49	16.41	40	_2_(2)/2(1)	2	1	2	Left
ICN 53811	54.95	16.75	40	2(2)/2(1)	2	2	2	Left
ICN 53811	55.71	17.74	40	2(2)/2	2	2	2	Left
ICN 53811	55.39	17.96	40	2(2)/2	2	2	2	Left
ICN 53811	50.10	16.20	41	1/2	1	1	2	NA
ICN 53811	57.05	17.10	41	1/2	1	1	2	NA
ICN 53811	59.86	17.95	41	1/2	1	1	2	NA
ICN 53811	56.94	15.94	41	NA	NA	NA	NA	NA
ICN 53811	55.78	16.81	41	NA	NA	NA	NA	NA

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	Pos	Asymmetry
ICN 53812	9.75	3.55	25	0/2	0	0	2	NA
ICN 53812	7.12	3.23	25	1/2(1)	1	1	2	NA
ICN 53812	14.29	4.38	25	1/2(1)	1	1	2	NA
ICN 53812	12.46	4.45	25	1/2(1)	1	1	2	NA
ICN 53812	11.85	4.52	25	1/2(1)	1	1	2	NA
ICN 53812	12.09	4.70	25	1/2	1	1	2	NA
ICN 53812	13.78	4.94	25	1/2(1)	1	1	2	NA
ICN 53812	11.76	4.48	26	1/2(1)	1	1	2	NA
ICN 53812	11.94	4.57	26	1/2(1)	1	1	2	NA
ICN 53812	14.29	4.83	26	1/2(1)	1	1	2	NA
ICN 53812	14.87	4.84	26	1/2(1)	1	1	2	NA
ICN 53812	14.73	4.97	26	1/2(1)	1	1	2	NA
ICN 53812	12.40	5.04	26	1/2(1)	1	1	2	NA
ICN 53812	13.68	5.06	26	1/2(1)	1	1	2	NA
ICN 53812	13.76	5.31	26	1/2(1)	1	1	2	NA
ICN 53812	13.90	5.44	26	1/2(1)	1	1	2	NA
ICN 53812	19.06	5.82	26	1/2(1)	1	1	2	NA
ICN 53812	20.55	6.36	26	1/2	1	1	2	NA
ICN 53812	19.50	6.60	26	1/2(1)	1	1	2	NA
ICN 53812	20.98	6.61	26	1/2(1)	1	1	2	NA
ICN 53812	20.45	7.00	26	1/2(1)	1	1	2	NA
ICN 53812	22.81	7.30	26	_2_(2)/2(1)	2	1	2	Right
ICN 53812	15.90	5.20	27	1/2(1)	1	1	2	NA
ICN 53812	17.49	5.84	27	1/2(1)	1	1	2	NA
ICN 53812	18.89	5.86	27	1/2(1)	1	1	2	NA
ICN 53812	18.05	5.98	27	1/2(1)	1	1	2	NA
ICN 53812	16.12	6.23	27	1/2(1)	1	1	2	NA
ICN 53812	19.00	6.28	27	1/2(1)	1	1	2	NA
ICN 53812	19.27	6.30	27	1/2(1)	1	1	2	NA
ICN 53812	20.49	6.45	27	1/2(1)	1	1	2	NA
ICN 53812	19.40	6.50	27	1/2(1)	1	1	2	NA
ICN 53812	18.40	6.52	27	1/2(1)	1	1	2	NA
ICN 53812	19.30	6.75	27	1/2(1)	1	1	2	NA
ICN 53812	20.00	6.80	27	1/2(1)	1	1	2	NA
ICN 53812	19.40	6.85	27	1/2(1)	1	1	2	NA
ICN 53812	18.24	6.87	27	1/2(1)	1	1	2	NA
ICN 53812	21.24	6.94	27	1/2(1)	1	1	2	NA
ICN 53812	22.52	6.98	27	2(2)/2(1)	1	1	2	NA
ICN 53812	19.85	7.00	27	1/2(1)	1	1	2	NA
ICN 53812	20.63	7.12	27	1/2(1)	1	1	2	NA
ICN 53812	20.10	7.15	27	1/2(1)	1	1	2	NA
ICN 53812	21.39	7.20	27	1/2(1)	1	1	2	NA
ICN 53812	22.38	7.31	27	1/2(1)	1	1	2	NA
ICN 53812	19.00	7.40	27	1/2(1)	1	1	2	NA

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	Pos	Asymmetry
ICN 53812	19.80	7.41	27	1/2(1)	1	1	2	NA
ICN 53812	21.80	7.44	27	1/2(1)	1	1	2	NA
ICN 53812	22.13	7.45	27	1/2(1)	1	1	2	NA
ICN 53812	23.97	7.55	27	1/2	1	1	2	NA
ICN 53812	23.91	7.58	27	1/2(1)	1	1	2	NA
ICN 53812	16.38	7.58	27	1/2(1)	1	1	2	NA
ICN 53812	22.40	7.61	27	1/2(1)	1	1	2	NA
ICN 53812	21.40	7.65	27	1/2	1	1	2	NA
ICN 53812	25.20	7.66	27	1/2	1	1	2	NA
ICN 53812	23.96	7.83	27	1/2(1)	1	1	2	NA
ICN 53812	20.82	7.85	27	1/2(1)	1	1	2	NA
ICN 53812	26.35	8.05	27	1/2(1)	1	1	2	NA
ICN 53812	25.35	8.23	27	1/2	1	1	2	NA
ICN 53812	24.05	8.60	27	1/2	1	1	2	NA
ICN 53812	23.70	8.69	27	1/2(1)	1	1	2	NA
ICN 53812	23.30	8.70	27	1/2(1)	1	1	2	NA
ICN 53812	19.60	6.45	27	_2_(2)/2(1)	2	1	2	N
ICN 53812	19.96	6.94	27	_2_(2)/2(1)	2	1	2	Left
ICN 53812	22.05	7.35	27	_2_(2)/2(1)	2	1	2	Left
ICN 53812	20.80	7.66	27	_2_(2)/2	2	1	2	N
ICN 53812	27.15	8.97	27	_2_(2)/2	2	1	2	Left
ICN 53812	19.00	7.00	27	2(2)/2(1)	2	2	2	Left
ICN 53812	23.57	8.04	27	2(2)/2	2	2	2	N
ICN 53812	25.85	8.40	27	2(2)/2(1)	2	2	2	N
ICN 53812	21.40	6.77	28	1/2(1)	1	1	2	NA
ICN 53812	22.16	6.86	28	1/2(1)	1	1	2	NA
ICN 53812	21.77	7.40	28	1/2	1	1	2	NA
ICN 53812	22.80	7.56	28	1/2(1)	1	1	2	NA
ICN 53812	23.14	7.71	28	1/2(1)	1	1	2	NA
ICN 53812	25.75	7.74	28	1/2(1)	1	1	2	NA
ICN 53812	24.02	8.05	28	1/2	1	1	2	NA
ICN 53812	24.41	8.12	28	1/2	1	1	2	NA
ICN 53812	24.14	8.20	28	1/2(1)	1	1	2	NA
ICN 53812	25.26	8.25	28	1/2(1)	1	1	2	NA
ICN 53812	23.52	8.31	28	1/2(1)	1	1	2	NA
ICN 53812	23.10	8.48	28	1/2(1)	1	1	2	NA
ICN 53812	26.65	8.54	28	1/2(1)	1	1	2	NA
ICN 53812	15.80	8.60	28	1/2(1)	1	1	2	NA
ICN 53812	23.85	8.63	28	1/2(1)	1	1	2	NA
ICN 53812	22.09	8.68	28	1/2(1)	1	1	2	NA
ICN 53812	26.40	8.69	28	1/2	1	1	2	NA
ICN 53812	27.81	8.70	28	1/2(1)	1	1	2	NA
ICN 53812	22.75	8.89	28	1/2(1)	1	1	2	NA
ICN 53812	27.62	8.90	28	1/2(1)	1	1	2	NA

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	Pos	Asymmetry
ICN 53812	20.28	9.14	28	1/2(1)	1	1	2	NA
ICN 53812	30.64	9.99	28	1/2(1)	1	1	2	NA
ICN 53812	21.35	6.39	28	_2_(2)/2(1)	2	1	2	Right
ICN 53812	21.68	6.40	28	_2_(2)/2(1)	2	1	2	Left
ICN 53812	21.14	6.57	28	_2_(2)/2(1)	2	1	2	Left
ICN 53812	24.04	7.44	28	_2_(2)/2(1)	2	1	2	Left
ICN 53812	22.95	7.55	28	_2_(2)/2(1)	2	1	2	N
ICN 53812	21.18	7.70	28	_2_(2)/2(1)	2	1	2	N
ICN 53812	24.20	7.80	28	_2_(2)/2(1)	2	1	2	Right
ICN 53812	23.41	8.04	28	_2_(2)/2(1)	2	1	2	N
ICN 53812	26.91	8.49	28	_2_(2)/2(1)	2	1	2	N
ICN 53812	26.90	8.50	28	_2_(2)/2(1)	2	1	2	Right
ICN 53812	24.35	8.53	28	_2_(2)/2	2	1	2	Right
ICN 53812	24.30	8.59	28	_2_(2)/2(1)	2	1	2	Left
ICN 53812	26.85	8.66	28	_2_(2)/2(1)	2	1	2	Right
ICN 53812	28.80	8.74	28	_2_(2)/2	2	1	2	Left
ICN 53812	28.70	8.78	28	_2_(2)/2(1)	2	1	2	N
ICN 53812	25.95	8.96	28	_2_(2)/2(1)	2	1	2	Right
ICN 53812	27.36	9.20	28	_2_(2)/2(1)	2	1	2	Left
ICN 53812	29.04	9.37	28	_2_(2)/2(1)	2	1	2	Right
ICN 53812	27.61	9.61	28	_2_(2)/2(1)	2	1	2	N
ICN 53812	28.16	9.96	28	_2_(2)/2(1)	2	1	2	N
ICN 53812	22.67	7.45	28	2(2)/2(1)	2	2	2	N
ICN 53812	23.34	7.56	28	2(2)/2(1)	2	2	2	Left
ICN 53812	26.13	7.80	28	2(2)/2	2	2	2	Left
ICN 53812	24.43	8.34	28	2(2)/2(1)	2	2	2	N
ICN 53812	25.60	8.75	28	2(2)/2(1)	2	2	2	Right
ICN 53812	24.75	8.76	28	2(2)/2(1)	2	2	2	N
ICN 53812	23.76	8.93	28	2(2)/2	2	2	2	N
ICN 53812	26.46	9.10	28	2(2)/2(1)	2	2	2	Right
ICN 53812	27.31	9.24	28	2(2)/2(1)	2	2	2	N
ICN 53812	28.55	9.39	28	2(2)/2(1)	2	2	2	N
ICN 53812	26.68	8.10	29	1/2	1	1	2	NA
ICN 53812	25.60	8.62	29	1/2	1	1	2	NA
ICN 53812	22.00	7.64	29	_2_(2)/2(1)	2	1	2	N
ICN 53812	25.5	8.37	29	_2_(2)/2(1)	2	1	2	N
ICN 53812	27.64	8.47	29	_2_(2)/2(1)	2	1	2	Left
ICN 53812	25.20	8.55	29	_2_(2)/2(1)	2	1	2	Left
ICN 53812	27.50	8.71	29	_2_(2)/2(1)	2	1	2	Left
ICN 53812	29.01	9.23	29	_2_(2)/2(1)	2	1	2	N
ICN 53812	27.80	9.26	29	_2_(2)/2(1)	2	1	2	Right
ICN 53812	26.06	9.54	29	_2_(2)/2(1)	2	1	2	N
ICN 53812	28.24	9.64	29	_2_(2)/2(1)	2	1	2	N
ICN 53812	27.84	9.71	29	_2_(2)/2(1)	2	1	2	Left

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	Pos	Asymmetry
ICN 53812	29.74	9.74	29	_2_(2)/2(1)	2	1	2	Left
ICN 53812	26.30	9.86	29	_2_(2)/2(1)	2	1	2	Right
ICN 53812	31.85	9.94	29	_2_(2)/2(1)	2	1	2	Left
ICN 53812	32.18	10.15	29	_2_(2)/2(1)	2	1	2	Right
ICN 53812	27.29	8.00	29	2(2)/2(1)	2	2	2	N
ICN 53812	27.04	8.80	29	2(2)/2	2	2	2	N
ICN 53812	32.14	10.72	29	2(2)/2	2	2	2	N
ICN 53812	32.90	10.83	30	2(2)/2(1)	2	2	2	N
ICN 45840	45.54	15.05	35	2(2)/2(1)	2	2	2	N
ICN 45840	45.54	15.5	36	2(2)/2(1)	2	2	2	N
ICN 45840	51.96	17.61	38	2(2)/2	2	2	2	N
ICN 45840	48.04	15.84	39	2(2)/2(1)	2	2	2	N
ICN 45840	46.99	45.46	40	2(2)/2	2	2	2	N
ICN 45840	49.56	16.48	39	2(2)/2	2	2	2	N
ICN 45840	49.43	16.64	40	2(2)/2	2	2	2	N
ICN 45840	50.83	16.43	39	2(2)/2	2	2	2	N
ICN 45840	48.05	15.92	40	2(2)/2	2	2	2	N
ICN 45840	50.36	16.97	40	2(2)/2(1)	2	2	2	N
ICN 45881	10.76	4.21	25	1/2	1	1	2	NA
ICN 45881	13.45	5.54	25	1/2(1)	1	1	2	NA
ICN 45881	15.68	5.7	25	1/2(1)	1	1	2	NA
ICN 45881	13.26	5.76	25	1/2	1	1	2	NA
ICN 45881	15.63	5.86	25	1/2(1)	1	1	2	NA
ICN 45881	20.16	6.57	25	2(2)/2(1)	2	2	2	N
ICN 45881	15.58	6.7	25	2(2)/2(1)	2	2	2	I
ICN 45881	21.7	7.19	25	1/2(1)	1	1	2	NA
ICN 45881	21.24	7.68	25	1/2(1)	1	1	2	NA
ICN 45881	21.79	8.51	25	1/2(1)	1	1	2	NA
ICN 45881	25.24	9.06	25	2(2)/2(1)	2	2	2	Right
ICN 45881	26.33	9.15	25	2(2)/2	2	2	2	N
ICN 45881	28	9.67	25	1/2	1	1	2	NA
ICN 45881	26.8	9.86	25	1/2(1)	1	1	2	NA
ICN 45881	30.74	9.98	25	2(2)/2(1)	2	2	2	N
ICN 45881	29.36	10.3	25	NA	NA	NA	NA	NA
ICN 45881	21.48	7.25	26	1/2(1)	1	1	2	NA
ICN 45881	25.25	8.64	26	1/2	1	1	2	NA
ICN 45881	17.69	8.66	26	1/2(1)	1	1	2	NA
ICN 45881	26.5	9.07	26	2(2)/2	2	2	2	N
ICN 45881	24.87	9.34	26	2(2)/2	2	2	2	N
ICN 45881	23.32	9.39	26	2(2)/2	2	2	2	N
ICN 45881	27.24	9.45	26	1/2(1)	1	1	2	NA
ICN 45881	27.69	9.54	26	NA	NA	NA	NA	NA
ICN 45881	25.1	10.01	26	2(2)/2(1)	2	2	2	Right
ICN 45881	33.05	10.54	26	2[1](2)/2(1)	2	2	2	N

CatalogNumber	TL	BL	GS	LTRF	AnExt	AnCom	Pos	Asymmetry
ICN 45881	30.88	11.12	26	2(2)/2	2	2	2	Right
ICN 45881	23.25	12.92	26	2(2)/2(1)	2	2	2	N
ICN 45881	40.86	13.45	26	2(2)/2(1)	2	2	2	N
ICN 45881	38.31	13.63	27	1/2	1	1	2	NA
ICN 45881	39.52	14.01	28	1/2(1)	1	1	2	NA
ICN 45881	45.74	13.68	29	NA	NA	NA	NA	NA
ICN 45881	44.14	14.04	31	1/2(1)	1	1	2	NA
ICN 45881	45.24	14.8	33	2(2)/2(1)	2	2	2	N
ICN 45881	48.84	16.54	33	1/2	1	1	2	NA
ICN 45881	53.66	18.19	41	NA	NA	NA	NA	NA
ICN 53808	10.90	4.25	25	1/2	1	1	2	NA
ICN 53808	15.45	4.55	25	1/2(1)	1	1	2	NA
ICN 53808	7.40	4.65	25	1/2(1)	1	1	2	NA
ICN 53808	16.80	4.70	25	1/2	1	1	2	NA
ICN 53808	9.30	3.95	25	NA	NA	NA	NA	NA
ICN 53808	25.45	7.20	26	1/2(1)	1	1	2	NA
ICN 53808	23.65	7.35	26	1/2(1)	1	1	2	NA
ICN 53808	21.70	7.30	27	1/2(1)	1	1	2	NA
ICN 53808	31.30	8.90	27	1/2	1	1	2	NA
ICN 53808	30.75	8.90	27	1/2	1	1	2	NA
ICN 53808	30.25	9.65	27	1/2(1)	1	1	2	NA
ICN 53808	30.90	9.90	27	1/2(1)	1	1	2	NA
ICN 53808	34.60	9.60	28	1/2	1	1	2	NA
ICN 53808	33.50	10.85	28	1/2(1)	1	1	2	NA
ICN 53808	40.95	13.60	28	1/2(1)	1	1	2	NA
ICN 53808	35.25	11.70	29	1/2(1)	1	1	2	NA
ICN 53808	39.90	12.65	31	1/2(1)	1	1	2	NA
ICN 53808	39.50	13.75	34	1/2(1)	1	1	2	NA
ICN 53808	48.75	17.10	35	1/2	1	1	2	NA
ICN 53808	49.95	16.05	36	1/2	1	1	2	NA
ICN 53808	46.95	16.15	37	1/2	1	1	2	NA
ICN 53808	55.15	17.45	37	1/2	1	1	2	NA
ICN 53808	54.50	19.20	40	1/2	1	1	2	NA
ICN 53808	58.80	20.15	40	NA	NA	NA	NA	NA

Appendix S2.1

iter.cor.test.R function needed for the analysis script. Written in R. Documentation about its usage is found in the commented (#) lines.

```
# iterative cor.test function

# Formals are x, y, data, and ...

# `x` is a vector containing either indexes or names for the independent variable in the correlation

# `y` is a vector containing either indexes or names for the dependent variables in the correlation

# `data` is the dataset where x and y are located. If data are not in either matrix or data frame convert the to such
structure before using the function.

# ... are further arguments to be passed for the cor.test function. See ?cor.test for further information

iter.cor.test <- function(x, y, data, ...) {
  if((class(x) == "numeric" | class(y) == "numeric") & (typeof(x) == "double" | typeof(y) == "double")) {
    warning("Either `x` or `y` are numeric but not integers. Coercion to integer will take only the entire part of the
indexes (i.e., 1.6 becomes 1)")
  }
  output <- list()
  length(output) <- length(x) * length(y)
  iter <- 0
  for(i in seq_along(x)) {
    for(j in seq_along(y)) {
      iter <- iter + 1
      output[[iter]] <- cor.test(x = data[, x[i]], y = data[, y[j]], ...)
      names(output)[iter] <- paste(as.character(x[i]), "vs", as.character(y[j]), sep = "_")
    }
  }
  return(output)
}
```

Appendix S2.2

ontogeny.R script for carrying out the analyses. It also produces tables 1-3 and figures 1, 3, and 5. It requires the function iter.cor.test, to its corresponding script (iter.cor.test.R) must reside in the same working directory as this script and both datasets (embryos.csv and larvae.csv). Documentation found as commented lines (#).

```
# load packages needed
library(xlsx)

# load the iter.cor.test function
source("iter.cor.test.R")

# read datasets
larvae <- read.csv("larvae.csv", stringsAsFactors = FALSE)
embryos <- read.csv("embryos.csv", stringsAsFactors = FALSE)

# Add a rank variable adding up all of the tooth rows
embryos <- cbind(embryos,
  LTRFExt = apply(embryos[, c("AnExt", "PosExt")], MARGIN = 1, FUN = sum),
  LTRFCom = apply(embryos[, c("AnCom", "PosCom")], MARGIN = 1, FUN = sum))

# Individual No 360 in the larvae dataset shows a huge BL that might be affecting other data, rm it
larvae <- larvae[-360, ]

# Individual with BL = 80 in the embryos dataset affecting the data, rm it
embryos$BL[which(embryos$BL > 80)] <- NA

# cor.test was used for finding Spearman's rho and its respective p value, that is, the probability of finding that rho or a
# higher one, what measures the confidence on the rho found. See Mukuka (2012) for interpretations, but roughly
# speaking rho should be interpreted this way:
# 0.0 < negligible < 0.3
# 0.3 < low < 0.5
# 0.5 < moderate < 0.7
# 0.7 < high < 0.9
# 0.9 < very high < 1.0

#### Data frame with total number of rows, GS and BL

toothRows <- data.frame(BL = c(embryos$BL, larvae$BL),
  GS = c(embryos$GS, larvae$GS),
  A = c(embryos$AnExt, larvae$AnExt),
  P = c(embryos$PosExt, larvae$Pos),
  stringsAsFactors = FALSE)
toothRows <- cbind(toothRows, Total = (toothRows$A + toothRows$P))

# Spearman's rho correlation for larvae (x = c("BL", "GS"), y = c("AnExt", "AnCom"), data = larvae)

larvaCor <- iter.cor.test(x = c("BL", "GS"), y = c("AnExt", "AnCom"), data = larvae, method = "spearman", exact =
FALSE, paired = FALSE)

# Spearman's rho correlation for embryos will not work for embryos out of the box, order might work (0/0 > 0/1 > 0/2 >
1/2)
# formals x = c("BL", "GS"), y = c("LTRFExt", "LTRFCom"), data = larvae

embryoCor <- iter.cor.test(x = c("BL", "GS"), y = c("LTRFExt", "LTRFCom"), data = embryos, method = "spearman",
exact = FALSE, paired = FALSE)
```



```
# Generate tables with rho + p-value
```

```
larvaTable <- data.frame(Contrast = names(larvaCor),
  Rho = unname(unlist(larvaCor)[grep("estimate", names(unlist(larvaCor)))]),
  p.value = unname(unlist(larvaCor)[grep("p.value", names(unlist(larvaCor)))]), stringsAsFactors =
FALSE)
```

```
larvaTable$Contrast <- gsub("_", " ", larvaTable$Contrast)
larvaTable$Contrast <- gsub("AnExt", "A-n Extended", larvaTable$Contrast)
larvaTable$Contrast <- gsub("AnCom", "A-n Compact", larvaTable$Contrast)
larvaTable$Rho <- round(as.numeric(larvaTable$Rho), digits = 4)
larvaTable$p.value <- as.numeric(larvaTable$p.value)
```

```
embryoTable <- data.frame(Contrast = names(embryoCor),
  Rho = unname(unlist(embryoCor)[grep("estimate", names(unlist(embryoCor)))]),
  p.value = unname(unlist(embryoCor)[grep("p.value", names(unlist(embryoCor)))]), stringsAsFactors =
FALSE)
embryoTable$Contrast <- gsub("_", " ", embryoTable$Contrast)
embryoTable$Contrast <- gsub("LTRFExt", "LTRF Extended", embryoTable$Contrast)
embryoTable$Contrast <- gsub("LTRFCom", "LTRF Compact", embryoTable$Contrast)
embryoTable$Rho <- round(as.numeric(embryoTable$Rho), digits = 4)
embryoTable$p.value <- as.numeric(embryoTable$p.value)
```

```
# concatenate both tables in order to reduce manuscript space
generalCorTable <- rbind(embryoTable, larvaTable)
generalCorTable <- data.frame(OntogeneticSet = c(rep("Embryos", times = 4), rep("Larvae", times = 4)),
  generalCorTable)
```

```
# Table for anomaly frequencies
anomalies <- read.csv("anomalies.csv", stringsAsFactors = FALSE)
relAnomalies <- cbind(anomalies[, c(1, 2)], anomalies[, 3:8]/anomalies$n*100)
```

```
# write tables to xls files
write.xlsx(generalCorTable, file = "Table 1.xls", row.names = FALSE)
write.xlsx(relAnomalies, file = "Table 2.xls", row.names = FALSE)
```

```
# gap in P1 percentages
gaps <- c(Absent = length(grep("(1)", larvae$LTRF, fixed = TRUE)),
  Present = (length(larvae$LTRF) - length(grep("(1)", larvae$LTRF, fixed = TRUE)))/length(larvae$LTRF)*100)
```

```
# A-2 symmetry percentages
symmetry <- c(Asymmetric = sum(table(larvae$Asymmetry)[c("Left", "Right")]),
  Symmetric = unname(table(larvae$Asymmetry)[3])/sum(table(larvae$Asymmetry))*100)
```

```
### Figures
```

```
# overall row vvariation multiplot
# mar = margins for each plot
# oma = margins for the whole plot area
# set par(cex = ) before plotting each element as overriding happens otherwise
png(filename = "Figure 1.png", width = 1200, height = 1000, res = 170)
```

```
par(cex = 2, oma = c(5, 5, 3, 2), mar = c(1.5, 1.5, 1.5, 1.5) + 0.1)
layout(matrix(c(1,1,2,3), 2, 2, byrow = TRUE))
```

```
plot(x = toothRows$BL, y = toothRows$Total, yaxt = "n", ylab = "", xlab = "")
axis(side = 2, at = c(0, 1, 2, 3, 4), labels = c("0/0", "0/1", "0/2", "1/2", "2/2"), las = 2)
abline(v = 5, lty = 2, col = "gray28")
plot(x = embryos$BL, y = apply(cbind(embryos$AnExt, embryos$PosExt), 1, FUN = sum), yaxt = "n", ylab = "", xlab =
  "")
axis(side = 2, at = c(0, 1, 2, 3, 4), labels = c("0/0", "0/1", "0/2", "1/2", "2/2"), las = 2)
plot(x = larvae$BL, y = larvae$AnExt + 2, yaxt = "n", ylab = "", xlab = "")
axis(side = 2, at = c(0, 1, 2, 3, 4), labels = c("0/0", "0/1", "0/2", "1/2", "2/2"), las = 2)
```

```
mtext("LTRF variation through ontogeny", outer = TRUE, cex = 1.7)
par(cex = 1.2)
title(xlab = "Body length (mm)", ylab = "Labial Tooth Row Formula (LTRF)", outer = TRUE)

dev.off()

### material examined, GS ranges
paste(min(embryos$GS[embryos$CatalogNumber == "CATALOG NUMBER"], na.rm = TRUE), sep = " - ",
max(embryos$GS[embryos$CatalogNumber == "CATALOG NUMBER"], na.rm = TRUE))

paste(min(larvae$GS[larvae$CatalogNumber == "CATALOG NUMBER"], na.rm = TRUE), sep = " - ",
max(larvae$GS[larvae$CatalogNumber == "CATALOG NUMBER"], na.rm = TRUE))
```

Appendix S3

Species of *Dendropsophus* and references describing oral morphology. The column LTRF (labial tooth row formula) includes the conditions known to be present for each species; n represents the number of individuals on which each description was based when available; reference is the original source of the data as found in the References section, and comments whenever adequate. Unavailable information is coded as NA. For any species with all three fields with NAs the tadpole is still unknown/undescribed. References other than those from the main article body are presented below.

Species	Species group	LTRF	n	Reference	Comments
<i>Dendropsophus acreanus</i> (Bokermann, 1964)	marmoratus	NA	NA	NA	
<i>Dendropsophus amicum</i> (Mijares-Urrutia, 1998)	unassigned	NA	NA	NA	
<i>Dendropsophus anataliasiasi</i> (Bokermann, 1972)	rubicundulus clade	NA	NA	NA	
<i>Dendropsophus anceps</i> (Lutz, 1929)	leucophyllatus	2/2-2/3	NA	Wogel et al. (2000); Jungfer et al. (2010)	
<i>Dendropsophus aperomeus</i> (Duellman, 1982)	minimus	NA	NA	NA	
<i>Dendropsophus araguaya</i> (Napoli and Caramaschi, 1998)	rubicundulus clade	NA	NA	NA	
<i>Dendropsophus battersbyi</i> (Rivero, 1961)	unassigned	NA	NA	NA	
<i>Dendropsophus berthallutzae</i> (Bokermann, 1962)	decipiens clade	0/0	NA	Bokermann (1963)	
<i>Dendropsophus bifurcus</i> (Andersson, 1945)	leucophyllatus	0/0	NA	Gomes and Peixoto (1991a)	
<i>Dendropsophus bipunctatus</i> (Spix, 1824)	microcephalus	beaks	8	Cruz and Dias (1991)	
<i>Dendropsophus bogerti</i> (Cochran and Goin, 1970)	columbianus	1/2	3	Kaplan (1997)	
<i>Dendropsophus bokermanni</i> (Goin, 1960)	parviceps	0/0	NA	Wild (1992)	
<i>Dendropsophus branneri</i> (Cochran, 1948)	microcephalus	NA	NA	NA	
<i>Dendropsophus brevifrons</i> (Duellman and Crump, 1974)	parviceps	0/0	NA	Wild (1992)	

Species	Species group	LRTF	<i>n</i>	Reference	Comments
<i>Dendropsophus bromeliaceous</i> Ferreira, Faivovich, Beard and Pombal Jr., 2015	unassigned	NA	NA	NA	
<i>Dendropsophus cachimbo</i> (Napoli and Caramaschi, 1999)	rubicundulus clade	NA	NA	NA	
<i>Dendropsophus carnifex</i> (Duellman, 1969)	columbianus	1/2	NA	Rivera- Correa and Gutiérrez- Cárdenas (2012)	
<i>Dendropsophus cerradensis</i> (Napoli and Caramaschi, 1998)	rubicundulus clade	NA	NA	NA	
<i>Dendropsophus coffeus</i> (Köhler, Jungfer, and Reichle, 2005)	unassigned	NA	NA	NA	
<i>Dendropsophus columbianus</i> (Boettger, 1892)	columbianus	1/2	NA	Lynch (2006)	
<i>Dendropsophus counani</i> Fouquet, Orrico, Ernst, Blanc, Martinez, Vacher, Rodrigues, Ouboter, Jairam, and Ron, 2015	unassigned	NA	NA	NA	
<i>Dendropsophus cruzi</i> (Pombal and Bastos, 1998)	microcephalus	NA	NA	NA	
<i>Dendropsophus decipiens</i> (Lutz, 1925)	decipiens clade	0/0	NA	Abreu et al. (2013)	
<i>Dendropsophus delarivai</i> (Köhler and Lötters, 2001)	minutus	NA	NA	NA	
<i>Dendropsophus dutrai</i> (Gomes and Peixoto, 1996)	marmoratus	NA	NA	NA	
<i>Dendropsophus ebraccatus</i> (Cope, 1874)	leucophyllatus	0/0	NA	Lynch (2006)	
<i>Dendropsophus elegans</i> (Wied- Neuwied, 1824)	leucophyllatus	0/1	203	G. A. Ballen, personal observation	
<i>Dendropsophus elianeae</i> (Napoli and Caramaschi, 2000)	microcephalus	NA	NA	NA	
<i>Dendropsophus frosti</i> Motta, Castroviejo-Fisher, Venegas, Orrico, and Padial, 2012		NA	NA	NA	
<i>Dendropsophus garagoensis</i> (Kaplan, 1991)	garagoensis	0/0		Kaplan (1991)	
<i>Dendropsophus gaucheri</i> (Lescure and Marty, 2000)	parviceps	NA	NA	NA	
<i>Dendropsophus giesleri</i> (Mertens, 1950)	parviceps	0/0-0/1	11	Santos et al. (1998)	

Species	Species group	LRTF	<i>n</i>	Reference	Comments
<i>Dendropsophus grandisonae</i> (Goin, 1966)	parviceps	NA	NA	NA	
<i>Dendropsophus gryllatus</i> (Duellman, 1973)	microcephalus	NA	NA	NA	
<i>Dendropsophus haddadi</i> (Bastos and Pombal, 1996)	decipiens clade	0/0	26	Abreu et al. (2013)	
<i>Dendropsophus haraldschultzi</i> (Bokermann, 1962)	unassigned	0/1	NA	Lynch and Suárez-Mayorga (2011)	
<i>Dendropsophus jimi</i> (Napoli and Caramaschi, 1999)	microcephalus	NA	NA	NA	
<i>Dendropsophus joannae</i> (Köhler and Lötters, 2001)	microcephalus	NA	NA	NA	
<i>Dendropsophus juliani</i> Moravec, Aparicio, and Köhler, 2006	unassigned	NA	NA	NA	
<i>Dendropsophus koechlini</i> (Duellman and Trueb, 1989)	parviceps	0/0	NA	Wild (1992)	
<i>Dendropsophus labialis</i> (Peters, 1863)	labialis	1/2-2/2	848	This study	
<i>Dendropsophus leali</i> (Bokermann, 1964)	microcephalus	beaks	NA	Duellman (2005)	
<i>Dendropsophus leucophyllatus</i> (Beireis, 1783)	leucophyllatus	0/0	NA	Gomes and Peixoto (1991a)	
<i>Dendropsophus limai</i> (Bokermann, 1962)	minutus	NA	NA	NA	
<i>Dendropsophus luddeckei</i> Guarnizo, Escallón, Cannatella, and Amézquita, 2012	labialis	NA	NA	NA	
<i>Dendropsophus luteoocellatus</i> (Roux, 1927)	parviceps	NA	NA	NA	
<i>Dendropsophus manonegra</i> Rivera-Correa and Orrico, 2013	leucophyllatus	NA	NA	NA	
<i>Dendropsophus marmoratus</i> (Laurenti, 1768)	marmoratus	0/0	2	Duellman (2005)	
<i>Dendropsophus mathiassoni</i> (Cochran and Goin, 1970)	microcephalus	beaks	NA	Lynch and Suárez-Mayorga (2011)	
<i>Dendropsophus melanargyreus</i> (Cope, 1887)	marmoratus	NA	NA	NA	
<i>Dendropsophus meridensis</i> (Rivero, 1961)	labialis	2/2	5	Mijares-Urrutia (1990)	

Species	Species group	LRTF	<i>n</i>	Reference	Comments
<i>Dendropsophus meridianus</i> (Lutz, 1954)	microcephalus	beaks	7	Cruz and Dias (1991)	
<i>Dendropsophus microcephalus</i> (Cope, 1886)	microcephalus	beaks	NA	Lynch (2006)	
<i>Dendropsophus microps</i> (Peters, 1872)	parviceps	0/0-0/2	10	Santos et al. (1998)	
<i>Dendropsophus minimus</i> (Ahl, 1933)	minimus	NA	NA	NA	
<i>Dendropsophus minusculus</i> (Rivero, 1971)	microcephalus	NA	NA	NA	
<i>Dendropsophus minutus</i> (Peters, 1872)	minutus	0/0-1/2	NA	Kaplan (1994)	
<i>Dendropsophus miyatai</i> (Vigle and Goberdhan-Vigle, 1990)	minimus	NA	NA	NA	
<i>Dendropsophus nahdereri</i> (Lutz and Bokermann, 1963)	marmoratus	0/1	33	Peixoto and Gomes (1999)	
<i>Dendropsophus nanus</i> (Boulenger, 1889)	microcephalus	beaks	5	Lavilla (1990)	
<i>Dendropsophus norandinus</i> Rivera-Correa and Gutiérrez-Cárdenas, 2012	columbianus	0/2	30	Rivera-Correa Gutiérrez-Cárdenas (2012)	
<i>Dendropsophus novaisi</i> (Bokermann, 1968)	marmoratus	NA	NA	NA	
<i>Dendropsophus oliveirai</i> (Bokermann, 1963)	decipiens clade	0/0	NA	Abreu et al. (2013)	
<i>Dendropsophus ozzyi</i> Orrico, Peloso, Sturaro, Silva, Neckel-Oliveira, Gordo, Faivovich, and Haddad, 2014	microcephalus	NA	NA	NA	
<i>Dendropsophus padreluna</i> (Kaplan and Ruiz-Carranza, 1997)	garagoensis	0/0		Kaplan and Ruiz-Carranza (1997)	
<i>Dendropsophus parviceps</i> (Boulenger, 1882)	parviceps	0/0	NA	Wild (1992)	
<i>Dendropsophus pauiniensis</i> (Heyer, 1977)	parviceps	NA	NA	NA	
<i>Dendropsophus pelidna</i> (Duellman, 1989)	labialis	1/2	59	Mijares-Urrutia (1998)	
<i>Dendropsophus phlebodes</i> (Stejneger, 1906)	microcephalus	NA	NA	NA	

Species	Species group	LRTF	<i>n</i>	Reference	Comments
<i>Dendropsophus praestans</i> (Duellman and Trueb, 1983)	columbianus	NA	NA	NA	
<i>Dendropsophus pseudomeridianus</i> (Cruz, Caramaschi, and Dias, 2000)	microcephalus	beaks	NA	Cruz et al. (2000)	
<i>Dendropsophus reichlei</i> Moravec, Aparicio, Guerrero-Reinhard, Calderon, and Köhler, 2008	unassigned	NA	NA	NA	
<i>Dendropsophus rhea</i> (Napoli and Caramaschi, 1999)	microcephalus	NA	NA	NA	
<i>Dendropsophus rhodopeplus</i> (Günther, 1858)	microcephalus	beaks	1	Duellman (1972)	
<i>Dendropsophus riveroi</i> (Cochran and Goin, 1970)	minimus	2/3	NA	Lynch and Suárez-Mayorga (2011)	
<i>Dendropsophus robertmertensi</i> (Taylor, 1937)	microcephalus	NA	NA	NA	
<i>Dendropsophus rossalleni</i> (Goin, 1959)	leucophyllatus	0/1	NA	Lynch and Suárez-Mayorga (2011)	
<i>Dendropsophus rubicundulus</i> (Reinhardt and Lütken, 1862)	rubicundulus clade	beaks	8	Pugliese et al. (2001)	
<i>Dendropsophus ruschii</i> (Weygoldt and Peixoto, 1987)	parviceps	0/1	7	Weygoldt and Peixoto (1987)	
<i>Dendropsophus salli</i> Jungfer, Reichle, and Piskurek, 2010	leucophyllatus	0/1	5	Schultze et al. (2015)	
<i>Dendropsophus sanborni</i> (Schmidt, 1944)	microcephalus	beaks	NA	Bokermann (1963)	Described as <i>Hyla nana</i> , resurrected from synonymy and reidentified from Bokermann's paper by Langone and Basso, 1987)
<i>Dendropsophus sarayacuensis</i> (Shreve, 1935)	leucophyllatus	0/0	NA	Lynch and Suárez-Mayorga (2011)	
<i>Dendropsophus sartori</i> (Smith, 1951)	microcephalus	NA	NA	NA	

Species	Species group	LRTF	<i>n</i>	Reference	Comments
<i>Dendropsophus schubarti</i> (Bokermann, 1963)	parviceps	NA	NA	NA	
<i>Dendropsophus seniculus</i> (Cope, 1868)	marmoratus	0/1	NA	Gomes and Peixoto (1991b)	
<i>Dendropsophus shiwiarum</i> Ortega-Andrade and Ron, 2013	microcephalus	NA	NA	NA	
<i>Dendropsophus soaresi</i> (Caramaschi and Jim, 1983)	marmoratus	0/1	NA	Gomes and Peixoto (1991b)	
<i>Dendropsophus stingi</i> (Kaplan, 1994)	minutus	1/2	NA	Kaplan (1994)	
<i>Dendropsophus studerae</i> (Carvalho-e-Silva, Carvalho-e-Silva, and Izecksohn, 2003)	microcephalus	beaks	4	Carvalho-e-Silva et al. (2003)	
<i>Dendropsophus subocularis</i> (Dunn, 1934)	parviceps	0/0	NA	Wild (1992)	
<i>Dendropsophus timbeba</i> (Martins and Cardoso, 1987)	parviceps	beaks	22	Wild (1992)	<i>D. allenorum</i> is a junior synonym
<i>Dendropsophus tintinnabulum</i> (Melin, 1941)	unassigned	NA	NA	NA	
<i>Dendropsophus triangulum</i> (Günther, 1869)	leucophyllatus	0/0	NA	Gomes and Peixoto (1991a)	
<i>Dendropsophus tritaeniatius</i> (Bokermann, 1965)	rubicundulus clade	NA	NA	NA	
<i>Dendropsophus virolinensis</i> (Kaplan and Ruiz-Carranza, 1997)	garagoensis	0/0	NA	Kaplan and Ruiz-Carranza (1997)	
<i>Dendropsophus walfordi</i> (Bokermann, 1962)	microcephalus	NA	NA	NA	
<i>Dendropsophus weneri</i> (Cochran, 1952)	microcephalus	NA	NA	NA	
<i>Dendropsophus xapuriensis</i> (Martins and Cardoso, 1987)	minutus	NA	NA	NA	
<i>Dendropsophus yaracuyan</i> (Mijares-Urrutia and Rivero, 2000)	unassigned	NA	NA	NA	

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